North Carolina Department of Environment and Natural Resources

Dexter Matthews, Director | **Division of Waste Management** | Beverly Eaves Perdue, Governor
Dee Freeman, Secretary

April 15, 2010

Ms. Nancy Rickard
Lincoln County Solid Waste Division
5291 Crouse Road
Crouse, NC 28033

Re: *Assessment Report January 2009 Leachate Release* and
Response to Comments Assessment Report January 2009 Leachate Release
Lincoln County Landfill, Permit #55-03

Dear Ms. Rickard:

The Solid Waste Section has completed a review of the *Assessment Report January 2009 Leachate Release* dated January 12, 2010 and the *Response to Comments Assessment Report January 2009 Leachate Release* dated April 1, 2010. Both reports were submitted on behalf of Lincoln County by S&ME, Inc. for the Lincoln County Landfill and are subsequent correspondences submitted pursuant to a Compliance Order issued by the Division of Waste Management, Solid Waste Section on March 3, 2009 for the violation of 15A NCAC 13B .1626(8)(d). As a result, the *Assessment Report January 2009 Leachate Release* and the *Response to Comments Assessment Report January 2009 Leachate Release* included the findings, conclusions, and recommendations related to the leachate release.

Soil and surface water samples were collected to determine the extent of the environmental impacts from the leachate release. The soil sampling results indicated no volatile organic compounds exceeded the NCDENR's Inactive Hazardous Sites Branch Health Based Soil Remediation Goals Updated October 2009 (Health Based Soil Remediation Goals). However, phosphorus, arsenic, and cobalt were detected above their Health Based Soil Remediation Goals of 0.32 mg/kg, 4.4 mg/kg, and 4.6 mg/kg respectively in many of the soil samples collected at the facility including the background samples. In addition, antimony and vanadium were each detected only in one soil sample above their Health Based Soil Remediation Goals of 6.2 mg/kg and 110 mg/kg, respectively. The surface water sampling results indicated no volatile organic compounds that have exceeded the NC 2B Surface Water Standards in any of the surface water samples. However, one metal, zinc, exceeded its NC 2B Surface Water Standard of 50 ug/L in two surface water samples collected at the facility.

The phosphorus levels detected in the soil samples during the July sampling event were significantly higher than the phosphorus levels detected in the soil samples during the January sampling event. The increased concentrations of phosphorus appear to have taken place between the January and July sampling events, and are most likely caused by the agricultural application of fertilizers with runoff feeding into the lowlands area.

Based upon the extensive assessment, Lincoln County has requested the following:

1. Lincoln County has already removed over a foot of soil within sediment trap ST-2 and recommends that no further remedial action or assessment be required within sediment trap ST-2.

2. It appears that the leachate did not penetrate the groundwater table in between the sediment trap and the lowlands area. The leachate remained as overland flow into the lowlands area and was quickly

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pumped back into the tanks. Since the lowlands area has remained flooded, the lowlands is the groundwater discharge for that area of the property, and it appears that it is not likely that the leachate release penetrated the groundwater table at or beyond the lowlands area. If groundwater monitoring wells were installed in between the lowlands and Indian Creek, given the nature of the area, the source of any "contamination" may not be discernable as from the landfill or from off-site. Therefore, the three groundwater monitoring wells approved within the Assessment Plan were not installed. Thus, Lincoln County requests that the groundwater monitoring wells will not be required at this time.

3. Because the lowlands area is on the landfill property, as well as its discharge point, Lincoln County recommends the use of the lowlands area as a natural treatment area for any remaining constituents from the leachate release. Lincoln County proposes to monitor the effects of the lowlands as a treatment area by incorporating a surface water monitoring location at the discharge of the lowlands in the Water Quality Monitoring Plan (WQMP) for the facility. The sample location identified as "discharge" will be sampled semi-annually in the months of April and October during the scheduled monitoring events for the facility. Lincoln County proposes that the discharge sample be analyzed for the same constituents as the leachate: Appendix I volatile organics and metals, biological oxygen demand (BOD), chemical oxygen demand (COD), nitrate-nitrite, phosphorus, sulfate, and total suspended solids (TSS).

4. The removal of soil and surface water in the lowlands area would require extensive work involving characterization of wetlands and permitting with the US Army Corps of Engineers, as well as potential disturbance and reconstruction of the identified wetlands. Treatment of leachate and wastewater utilizing natural and constructed systems as found in the lowlands area is an environmentally sustainable treatment option, and it serves no purpose to disturb an area which will naturally attenuate any constituents remaining from the leachate release, as well as existing and future constituents from stormwater runoff prior to entering Indian Creek. Therefore, Lincoln County requests that the lowlands area remain undisturbed.

As a result, the *Response to Comments Assessment Plan for January 2009 Leachate Release* dated April 1, 2010 is approved as described. If you have any questions or concerns regarding this letter, please contact me at 919-508-8500.

Sincerely,

Jaclynne Drummond
Hydrogeologist
Environmental Compliance
Solid Waste Section

cc via email: Julie Petersen, S&ME, Inc.
Mark Poindexter, Field Operations Supervisor
Deb Aja, Western District Supervisor
C.T. Gerstall, Environmental Senior Specialist
Shawn McKee, Compliance Officer
Solid Waste Section Central Files

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